

EXPLORATION AND NEW DEVELOPMENTS

Minerals

Aussie Q Resources Ltd has added another three million tonnes (Mt) of resources to its **Whitewash** project near Monto. A 3 Mt Inferred Resource at 0.051% molybdenum, 0.07% copper and 1 g/t silver has been delineated at the Gordon's deposit. The resource estimate is based on 16 diamond and RC drill holes. This takes the total resource at Whitewash to 71.5 Mt at 0.034% molybdenum, 0.1% copper and 1.2g/t silver containing 24,000 t molybdenum, 71,000 t copper and 2.6 million ounces silver. At Gordon's, molybdenite mineralisation within the pipe-like body is observed as abundant disseminations within pegmatite, massive quartz and pegmatite breccias. Disseminated molybdenum mineralisation is also a feature of the porphyritic granite carapace at depth. This differs from the sheeted molybdenite-chalcopyrite-quartz veins forming the Whitewash deposit.

Rock chip sample assay results (**Aussie Q Resources Ltd**) have confirmed molybdenum mineralisation at the **Bucket Mountain** porphyry prospect, located about 45 km north west of Eidsvold. Rock chips indicate widespread molybdenum mineralisation in greisens, microgranite and quartz veins; best assay (sample 500009) returned 1240 ppm molybdenum and 1.5g/t silver.

Argonaut Resources NL has announced a maiden resource estimate of approximately six million tonnes of zinc and copper mineralisation at the **Kroombit** project. The zinc deposit contains Indicated Resources of 5.0 Mt grading 1.9% zinc and 0.15% copper and Inferred Resources of 0.2 Mt grading 1.8% zinc and 0.12% copper. The copper deposit contains Indicated Resources of 0.73 Mt grading 1.06% copper and Inferred Resources of 0.13 Mt grading 0.91% copper. The resource estimation results strongly support Argonaut's plans to establish an open-cut operation. There is significant potential for additional copper and zinc mineralisation, both below the existing deposits and around the periphery of the defined resource.

Wide spaced soil sampling and geological mapping by **D'Aguiar Gold Ltd** has located a significant silver and gold target at the **Cooper** prospect, about 20 km east of Baralaba. Rock chip samples assaying up to 1.6g/t gold have been obtained within a 1 km wide and 6 km long silver-gold soil geochemical anomaly.

Diatreme Resources Ltd has completed six diamond drill holes (totalling 3470 m) over six prospect sites within the **Rosevale Corridor** 15 km southwest of Clermont. Significant mineralisation was at Round Hill where drill hole RHN001 intersected 5 m grading 38.5g/t silver from 14 m depth within a veined rhyolite unit. Drill hole ELEKNTH001 at Elektra North intersected wide zones of low grade copper, molybdenum and gold mineralisation within a quartz monzonite porphyry. Chalcopyrite and molybdenite-bearing mineralisation was also observed within the drill hole samples at the Princess Fi prospect. A further four drill holes are planned for the September quarter.

Metallica Minerals Ltd has announced 29 Mt of limestone at the **Fairview** limestone project. Drilling has defined a high grade deposit to a depth of 25 m and the company intends

to lodge a Mining Lease application. Completion of a resource definition drilling program at the [Boyne](#) limestone project (ML 80132) has been re-scheduled for the latter half of 2009.

Sampling and density test-work on the tailings at [Mount Morgan](#) gold project by **Norton Gold Fields Ltd** increased the resource (Indicated and Inferred) estimates of Mundic, No. 2 Mill and Red Oxide dumps by 11% to 220,000 ozs. Other work introduced Shepherds Gully into the resource at 3.96 Mt grading 0.86 g/t gold. This extended the total resource to 8.3 Mt grading 1.23 g/t gold for 326,000 ozs. Norton plans to build a 1 Mtpa plant to produce 30,000 to 35,000 ozs per year of gold from tailings over 12 years. Full production is expected within 12 months of project funding and approval.

The Pajingo Joint Venture (**North Queensland Metals Ltd** 60% and **Heemskirk Consolidated** 40%) has acquired the [Twin Hills](#) gold project from Gold One International Ltd for \$1.75 million. Twin Hills is located 190 km by road south of the Pajingo gold mine operation. The Joint Venture partners will embark on a Feasibility Study based on trucking gold ore to Pajingo for treatment. The study may include additional drilling and subsequent modelling to suit a revised mine plan as a satellite mine.

Rugby Mining Ltd has completed a total of 119 bedrock auger holes drilled on 200 m x 200 m spaced intervals at the [Hawkwood](#) copper-magnetite project, about 50 km southwest of Mundubbera. This auger program has defined a copper geochemical anomaly (>500 ppm) over an area of 200 m x 1200 m. A reconnaissance program was also conducted to locate outcropping iron ore within strongly magnetic anomalies identified from aeromagnetic surveys. A total of 14 rock chip samples of iron mineralisation were collected and assays ranged from 24.9% to 52.1% iron.

Coal

Aquila Resources Ltd and **Vale Australia Ltd** continued to work on Pre-Feasibility studies at the [Belvedere](#) coal project. Results of the study are expected to be released during the March quarter of 2010. Exploration drilling continued during the quarter with up to five rigs on site. Evaluation of the 3D seismic survey was completed with the provision of the detailed interpretation and reconciliation of the acquisition data.

Aquila Resources Ltd has announced results of a mining Concept Study for the development of [Washpool](#) coal project, near Blackwater. The study indicates robust economics for an open cut mine operation that could produce up to 1.6 Mtpa of coking coal from 4 Mtpa of run-of-mine coal over an 18 year mine life by 2012. Mining methods could utilise two draglines with truck and shovel, and coal could be exported via the Wiggins Island Coal Terminal. Capital costs for the project have been estimated at \$402 million and a Feasibility Study currently underway is expected to be completed by December 2010.

Bandanna Energy Ltd has completed over 3300 m of drilling at the [Arcturus](#) coal project, with six seams intersected down to a depth of 147 m. The combined coal thickness of the six seams (Aries, Castor, Pollux Rider, Pollux, Orion 1 and Orion 2) averaged approximately 6.4 m. The drilling consisted of 21 open holes, 11 line of oxidation holes and 11 core holes on the Arcturus Anticline in the southeast of EPC 1221. These drilling results have enabled a new total resource of 153.5 Mt to be estimated, an 11% increase on the previous tonnage. This estimate includes Indicated Resources of 54.5 Mt and Inferred Resources of 99 Mt.

A total of five open holes totalling 673 m were completed at the [Fernlee North](#) (EPC 1185) coal project to identify potential areas suitable for open cut mining. Eight open holes were completed at [Dingo West](#) (EPC 881) during the quarter. Three core holes are planned in the near future to provide samples for washability test work. Macarthur Coal Ltd and Noble Group have withdrawn from the Dingo West Joint Venture and Farm In Agreement.

An initial resource estimate of 982 Mt has been announced for the [Alpha](#) (EPC 1049) coal project (**Bandanna Energy Ltd** 50% and **AMCI** 50%). The estimate includes Indicated Resources of 60 Mt and Inferred Resources of 922 Mt within the D1 and D2 seams of the Bandanna Formation. These coal seams dip very gently (0.5 to 2.5° to the west) and average 4.3 m and 2.5 m in thickness, respectively. Some 392 Mt (40%) of the resource estimate lies within 120 m from the surface. During the quarter two core holes totalling 245 m were drilled to provide samples for washability test work. Additional exploration target tonnage range of 570 to 960 Mt has been announced for EPC 1049.

BMA has lodged a draft EIS document for the \$4 billion [Caval Ridge](#) open cut coal project, south of Moranbah. The mine will produce 5.5 Mtpa of coking coal product from multiple coal seams within the Moranbah Coal Measures over 30 years. The CHPP will also process coal from the adjacent Peak Downs mine to produce 8 Mtpa of coal product for export. Construction will require up to 1200 people and may commence in 2010, while first coal production is planned for 2013. Caval Ridge has Measured, Indicated and Inferred coal resources totalling 216.7 Mt.

Bowen Energy Ltd has completed four open holes (totalling 2052 m) and two core holes (totalling 978 m) at the [Katrina](#) (formerly Shotover) coal prospect located about 50 km northeast of Rolleston. All drill holes intersected multiple coal seams with the thickest seam in each hole varying between 1.4 to 2.5 m. Coal quality results from seven open hole chip samples indicate low (1.0 to 2.5) Crucible Swelling Numbers indicating poor coking coal properties. Analytical results from drill core samples will be critical to determining the potential of this prospect.

Caledon Resources PLC has reported a 230 Mt (31%) increase in total resources at the [Cook](#) underground coal mine. The new estimate of 406 Mt is based on five coal seams within the Rangal Coal Measures and contains Measured Resources of 86 Mt, Indicated Resources of 90 Mt and Inferred Resources of 230 Mt. Some 303 Mt (75%) of the total resource lies at depths less than 300 m. A review of geological data previously held, plus the recent receipt of additional historical data, led to the resource upgrade.

The company has also reported a 50 Mt (17%) increase in total resources at the [Minyango](#) underground coal project. The new estimate of 342 Mt is based on two coal seams within the Rangal Coal Measures and contains Measured Resources of 52 Mt, Indicated Resources of 100 Mt and Inferred Resources of 190 M. Some 308 Mt (90%) of the total resource lies at depths less than 300 m. Five coal quality holes were completed during the quarter for a total of 1312 m as part of an infill drilling program.

During the June quarter, **Cockatoo Coal Ltd** used four drilling rigs to systematically advance the geological understanding and mine development potential of the [Baralaba](#) coal mine. Some 162 open holes totaling 19,780 m were completed mainly within MLA80157 and MDL184, immediately to the north of the Baralaba pit. Geological information from the drilling is providing confidence in the continuity of the producing coal seams, in addition to giving control to medium to long term mine planning. Limited drilling east of the Baralaba

pit within ML5605 has been completed in order to increase confidence in the geological understanding of the deposit and improve short term mine planning.

A coal quality drilling program involving two rigs is in progress at the [Baralaba North](#) coal deposit. Ten core holes totaling 944 m were completed during the quarter. The drilling results are providing confidence in quality consistency over a strike length in excess of two kilometres, between the Baralaba mine and the Baralaba North exploration area. During the June quarter **Cockatoo Coal Ltd** entered into a Joint Venture Agreement with Aston Dingo Limited, part of the **Aston Resources Group**, to explore and assess the potential development of the [Dingo](#) coal project. Planning and site preparation for open hole drill testing in the next quarter, is well underway. Four drill rigs will be used to complete the 140 open holes that represent Stage 1 of the JV program.

Linc Energy Ltd has completed nine of the 39 exploration holes at the [Labona](#) coal project, within the Galilee Basin. The initial drilling program involves 24 core holes and 15 chip holes totalling 12,860 m. Drilling will target up to five coal seams in the centre of the deposit where the total cumulative coal thickness is up to 35 m. It is the company's intention to immediately expand the Labona drilling program from a 39 to a 101 drill hole program, wherein the potential open cut resource could be estimated to an Indicated Resource category.

Line of oxidation (LOX) and coal quality drilling continued during the quarter at the [Middlemount](#) coal project (**Macarthur Coal Ltd**) to provide data for the Stage 1 mine plan. Planning of the construction activities for the Stage 1 mine was also undertaken as construction of the CHPP and mine infrastructure will commence immediately after the lease is granted in the September quarter.

New resource estimates have been announced for Olive Downs North and Codrilla coal projects. At [Olive Downs North](#) total resources include 30.6 Mt Measured, 35.3 Mt Indicated and 61.1 Mt of Inferred resources. At [Codrilla](#) total coal resources have increased by 30% to 77.4 Mt which includes 41.2 Mt Measured, 12.2 Mt Indicated and 24.0 Mt of Inferred resources. **Macarthur Coal Ltd** has lodged an EIS Initial Advice Statement for the \$150 million Codrilla open cut mine project, about 45 km south southwest of Nebo. The mine is expected to produce 2.7 Mtpa of PCI and thermal coal products from two coal seams (Leichhardt Lower and Vermont Upper) within the Rangal Coal Measures over at least 16 years. A Feasibility Study for the project has commenced and first coal production is planned for 2011.

Vale Australia Ltd has lodged a draft EIS report for the [Ellensfield](#) coal project, north of Moranbah. The \$640 million underground longwall mine will target initial coal production from roadway development activity in 2010 and ramp up to 4.7 Mtpa coking and thermal coal products in 2012. Mining will extract the 4.5 to 5.5 m thick Leichhardt Seam which contains Measured, Indicated and Inferred resources totalling 209 Mt. The mining project will require a construction workforce of 500 and an operational workforce of 340 over the 21 year mine life.

Waratah Coal Ltd has announced the completion of a study into its proposed [Galilee](#) thermal coal mine and infrastructure project. The \$7.5 billion "China First Project", comprises the mine and a 490 km standard gauge rail line connecting to a new coal export terminal at Abbot Point near Bowen. A 40 Mtpa export thermal coal project based around four high capacity longwall mines and two large scale open cut operations using four

draglines has been proposed. Project construction may commence in late 2010, with first coal production planned for mid-2013.

Two centralised coal handling and processing plants (CHPP) with a joint capacity of 56 Mtpa will be required. Coal resources totalling 3930 Mt (Measured Resource 700 Mt, Indicated Resource 1030 Mt and Inferred resources 2200 Mt) have been estimated for the project. Infill drilling of the resource will continue to increase the existing Coal Reserves from 910 Mt to target of 1400 Mt. The study indicates employment of around 6000 people during construction and a permanent workforce of 1500 for the operational phase will be required. The EIS draft Terms of Reference for the project was lodged in June 2009.

Petroleum and coal seam gas

Arrow Energy Ltd has announced significant increases in CSG reserves in areas within and adjacent to the [Moranbah CSG Field](#) (Bowen Basin). Certified 2P (Proved and Probable) gas Reserves have increased 91% to 1135 PJ and 3P (Proved, Probable and Possible) gas Reserves have increased 91% to 1807 PJ. During the June quarter six drill rigs were involved in production drilling and three rigs were engaged in exploration drilling. The company will undertake the largest exploration and appraisal CSG drilling program within Queensland in its history during the 2009/10 period to accelerate and maximise conversion of the previously identified 70 trillion cubic feet (TCF) of resources into reserves.

Bow Energy Ltd has completed five appraisal wells (BW-1, 2, 2A, 3 and 4) within the [Blackwater CSG Field](#) (ATP 1025). The wells have indicated high gas contents (10 to 17 cubic metres per tonne) and good coal permeability in the Rangal and Fort Cooper Coal Measures. The results have confirmed an average total thickness of 23 m of gassy coal seams across the gas field. An additional two appraisal wells (BW-5 and BW-7) are expected to be completed in August. Once the initial core drilling is completed on the Blackwater CSG Field, the drilling rigs will mobilise to the [Comet CSG prospect](#) (northern portion of ATP 1025) where three core holes are planned. Three pilot wells would be drilled in the September quarter to establish potential gas flow rates within the Rangal and Upper Fort Cooper Coal Measures.

Bow Energy is also planning to drill up to nine exploration and appraisal wells in the September quarter at the [Norwich Park](#) CSG project (ATP 1031). Three CSG prospects (Vermont, Dysart and Norwich) within ATP 1031 have been identified for drill testing.

Scrubber Gully-1 appraisal well within the [Mahalo](#) CSG prospect (**Comet Ridge** 40%, Origin Energy 30% and Santos 30%) has been drilled and tested as planned. The well was drilled to a total depth of 486 m and intersected about four and a half metres of net coal within the Bandanna Formation. Preliminary results from the cored coal sections indicate good gas content and fair permeability across the main coal intersection and further analysis of the cored coal was underway. The Mahalo prospect has a prospective resource of about 1 TCF of gas in place.

During the quarter **Molopo Australia Ltd** achieved a major milestone with the completion of its third innovative multi-lateral trial development well, Mungi-20V (previously known as Mungi-20b) in the [Mungi](#) CSG Field. Mungi-20V has successfully accessed over 5300 m of lined coal for gas drainage in six laterals, involving three coal seams. A fourth well in the

current well program, Mungi-21, commenced in May. This well is targeting a total of 7000 m of completed in-seam coal length utilising laterals of 1200 m in length.

Dension Trough CSG Joint Venture partners **Santos Ltd** and **Origin Energy Ltd** have completed three appraisal wells (Hilltop-1, Arcadia Valley-2 and Hardenley-2) and two cored holes (Mulchay-1 and Huntley-1) at **Comet Ridge CSG Field** (ATP's 653 and 337) south southeast of Rolleston. A CSG cored hole (**Foley-1**) was also completed about 14 km northeast of Emerald within ATP 553.

WestSide Corporation Ltd and **QGC Ltd** have announced certified 3P gas Reserves of 270 PJ at the **Paranui** CSG project (ATP 769). It is estimated that ATP 769 contains a further 720 BCF of gas in place to a depth of 1000 m. Paranui-10 exploration core well was drilled to a depth of 905 m and intersected 25 m of net coal within the Baralaba Coal Measures. Initial results suggest that gas contents are consistent with previous modelling at between 11 and 14 cubic metres per tonne. Planned activities in the second half of 2009 include drilling a cored exploration well, seismic acquisition and conversion of the Paranui-4 observation well to an appraisal well.

WestSide Corporation Ltd and QGC Ltd have also announced certified 3P gas Reserves of 158 PJ at the **Tilbrook** CSG project (ATP 688), in the northern Bowen Basin. During the June quarter a five well drilling program was completed, including one dual-lateral horizontal appraisal well (Tilbrook-8) which is connected to more than 2000 m of exposed coal in the P Seam of the Moranbah Coal Measures from two lateral wells, Tilbrook-L8b and L8a. Production testing of the dual-lateral well is underway. Two exploration wells (Tilbrook-8a and -8b) were also completed at Tilbrook.

Two exploration core wells completed north of Tilbrook at Mount Saint Martin and Bald Hill were successful in identifying between eight and nine metres of gassy coal in an area previously considered to be unsuitable for CSG production. Preliminary desorption results from coal cores indicate average gas contents of 8.3 cubic metres per tonne at Mount Saint Martin and up to 8.5 cubic metres per tonne at Bald Hill.

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